

## What is claimed is

1. A disk drive managing method for managing disk drive in multiple disk-array system containing at least one disk-array, each array having at least one disk drive with an array configuration, said array configuration comprising  
5 an array signature and serial check sum of each disk drive in said array, said method comprising the steps of:

detecting each disk drive of said system;  
reading said an array configuration from said detected disk drive;  
validating said array signature of said disk drive;  
10 reading said serial check sum of other disk drive from the same array;  
recognizing said disk-array to be recorded or not; and  
recording from said disk drive.

2. The disk drive managing method as in claim 1, wherein said array signature is a specific value.

15 3. The disk drive managing method as in claim 2, wherein said disk drive is in a span array, if said specific value is fault.

4. The disk drive managing method as in claim 1, wherein said serial check sum of each disk drive in one array is arranged sequentially.

20 5. The disk drive managing method as in claim 4, wherein said serial check sum of each disk drive is obtained by a numeration on a model number, a serial number, and a firmware revision number of said disk drive.

6. The disk drive managing method as in claim 1, wherein said serial check sum of each disk drive in one array can be used to identify said arrays.

25 7. The disk drive managing method as in claim 1, further comprising a step of adding a new array record for a new array when said array is not recorded in said system.

8. The disk drive managing method as in claim 7, further comprising a step of assigning a new serial number for a new array.

30 9. The disk drive managing method as in claim 1, further comprising steps of

checking whether all disk drives have been detected; and  
recording integrity properties for all arrays.

10. The disk drive managing method as in claim 9, wherein said integrity property is for checking whether all disk drives recorded in serial check sum of

each disk drive of one array are detected and recorded by said system.

11. The disk drive managing method as in claim 9, wherein said array configuration is stored at said last sector of each disk drive.

12. A disk drive managing method for managing disk drive in multiple  
5 disk-array system containing at least one disk-array, each array having at least  
one disk drive, each disk drive having an array signature and a serial check sum  
stored at said last sector thereof, said method comprising the steps of  
detecting each disk drive from said system;  
reading said last sector from said detected disk drive;  
10 validating said array signature of said disk drive;  
reading said serial check sum of other disk drive from the same array;  
recognizing said disk-array to be recorded or not; and  
recording from said disk drive.

13. The disk drive managing method as in claim 12, wherein said array  
15 signature has specific value.

14. The disk drive managing method as in claim 12, wherein said array  
signature is stored at said first position of said last sector.

15. The disk drive managing method as in claim 12, wherein said serial  
check sum of each disk drive in one array is arranged sequentially.

20 16. The disk drive managing method as in claim 15, wherein said serial  
check sum of each disk drive is obtained by a numeration on a model number, a  
serial number, and a firmware revision number of said disk drive.

17. The disk drive managing method as in claim 15, wherein said serial  
check sum of each disk drive in one array can be used to identify said arrays.

25 18. The disk drive managing method as in claim 12, further comprising  
the steps of:

recording a new array; and

assigning a new serial number for said new array.

19. The disk drive managing method as in claim 12, further comprising  
30 steps of

checking whether all disk drives have been detected; and

recording integrity properties for all arrays.

20. The disk drive managing method as in claim 19, wherein said  
integrity property is for checking whether all disk drives recorded in serial

check sum of each disk drive in the same array are detected and recorded by said system.